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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|----------------------------|-------------|----------------------|---------------------|------------------|
| 10/648,798 | 08/27/2003 | Futoshi Osawa | DAIN : 747 | 3950 |
| 6160 | 7590 | 01/12/2005 | EXAMINER | |
| PARKHURST & WENDEL, L.L.P. | | | SEVER, ANDREW T | |
| 1421 PRINCE STREET | | | ART UNIT | |
| SUITE 210 | | | PAPER NUMBER | |
| ALEXANDRIA, VA 22314-2805 | | | 2851 | |

DATE MAILED: 01/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/648,798

Applicant(s)

OSAWA ET AL.

Examiner

Andrew T Sever

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,3 and 5-8 is/are rejected.
- 7) ☒ Claim(s) 2 and 4 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>8/2003</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The abstract of the disclosure is objected to because it is too long. Correction is required.

See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 3, and 5-8 are rejected under 35 U.S.C. 102(b) as being anticipated by

Moshrefzadeh et al. (US 6,417,966.)

The '966 reference teaches in figure 10 a diffusion sheet for use in a transmission-type screen comprising a main diffusion layer (1006 and 1004) having an incidence surface

and an emergence surface which are parallel to each other (the line with arrows drawn on it passing through the entire sheet, indicates the direction that the light passes through the surface),

The main diffusion layer diffusing a light, which is substantially perpendicularly incident on the incidence surface, in a diffusion direction to be emitted from the emergence surface (this is the purpose of a diffusion layer),

A plurality of groove channels (1004) each having a substantially v-shaped cross-section being disposed in parallel to one another on the emergence surface of the main diffusion layer,

Each groove channel being formed by two planes, curved surfaces, or bent planes which are joined to each other in the main diffusion layer,

A region sandwiched between the adjacent two groove channels providing a rib with a substantially trapezoidal cross-section, while the planes, curved surfaces, or bent planes which form each groove channel providing side surfaces of the rib (the surrounding material),

The light substantially perpendicularly incident on the incidence surface being reflected on the side surfaces of the rib so that the light is diffused in the diffusion direction (see the above indicated arrow), wherein

An assisting diffusion layer (1002, and 1020) is disposed on the side of the emergence surface of the main diffusion layer, or on both side of the emergence surface and the incidence surface of the main diffusion layer, the assisting diffusion layer having

a light diffusion component for diffusion layer having a light diffusion component for diffusing a light at least in the same direction as the diffusion direction, and

The light diffusion component of the assisting diffusion layer is adjusted such that a gain curve of an emergent light from the diffusion sheet has no minimal point. (See figure 6B, which shows the vertical gain, which clearly has no minimal point.)

With regards to applicant's claim 3:

The grooves are taught to be filled with a material having a low refractive index, which is lower than that of the material forming the rib (see column 15 lines 24-34.) (Only the material 1005 is not transparent.)

With regards to applicant's claim 5:

See above.

With regards to applicant's claims 6 and 7:

The '966 reference teaches in figure 22 and in detail in column 19 lines 9-22 the use of lenticular lens which is taught can be a prism lens in lines 35-40 (pyramid).

With regards to applicant's claim 8:

A Fresnel lens is taught (1022).

Allowable Subject Matter

5. Claims 2 and 4 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter:

Claim 2 claims that the gain curve has a specific variation value which was not found in the prior art.

Claim 4, claims that light absorption particles are dispersed in the resin (which is the material filling in the grooves). This was not found in the prior art. Although the '966 patent teaches particles in a resin for absorbing light, they are in the surrounding material not in the grooves. Coupled with the subject matter of claims 3 and 1 of which claim 4 is dependent on, the specific placement of the particles was not found and accordingly claim 4 would be allowable if re-written in independent form including the limitations of claims 1 and 3.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

US 6,727,313 to Zhou et al. teaches in figures 8-10 Gain curves of lambertian diffusers which show no minimal point.

US 3,279,314 W. S. Miller teaches a screen having groves in figure 2.

US 5,760,955 to Goldenberg et al. teaches a screen with various diffusers as well as a Fresnel lens in figure 4.

US 5,481,385 to Zimmerman et al. teaches in figure 10 a waveguide array with absorptive material between the waveguides (similar to that of the '966 patent).


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T Sever whose telephone number is 571-272-2128. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2851

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AS


JUDY NGUYEN
SUPERVISORY PATENT EXAMINER